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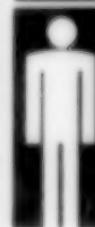
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draft bikeway needs study

ORIGINAL

GATEWAY
SANDY HOOK UNIT



NATIONAL RECREATION AREA / NEW JERSEY-NEW YORK

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BIKEWAY NEEDS STUDY

SANDY HOOK UNIT, GATEWAY NATIONAL RECREATION AREA

NEW JERSEY AND NEW YORK

November 1985
Supercedes
August 1985

U.S. Department of the Interior / National Park Service

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SUMMARY

The General Management Plan and Final Environmental Statement for Gateway National Recreation Area proposes the development of a bikeway within the Sandy Hook, New Jersey, unit of the national recreation area. Both National Park Service and Monmouth County, New Jersey, policies support use of bicycles as an alternative to automobile transportation wherever reasonable. Currently 12,000 visitors arrive at Sandy Hook by bicycle each year.

The beach at Sandy Hook can accommodate much more use than it currently receives, and new beach activity centers are being developed to meet the increasing demand by a growing population. However, the general management plan made a commitment to not increase the number of automobiles on the hook, by putting a ceiling on the number of parking spaces. This in turn limits the number of visitors who can arrive by private automobile. Thus, in order to make the recreational opportunities of Sandy Hook available to more people, it is essential to provide access to and circulation within the recreation area by alternate means of transportation, such as bicycles. For many of the 140,000 people residing within a 10-mile radius of Sandy Hook, as well as for numerous seasonal visitors, bicycling is a viable alternative to driving to the recreation area.



In addition to increasing the area's accessibility to nearby residents, the bikeway would substantially enhance the physical safety and the sense of safety of bicyclists, thereby greatly improving their park experience. Injury accidents involving bicycles and automobiles have not been numerous, but a potential for severe accidents exists because bicycles must currently use the same lanes as automobiles.

If constructed, the bikeway will be managed and maintained by the National Park Service for the exclusive use of bicyclists. The bikeway will be developed in conjunction with needed road improvements, at a cost of approximately \$227,000.

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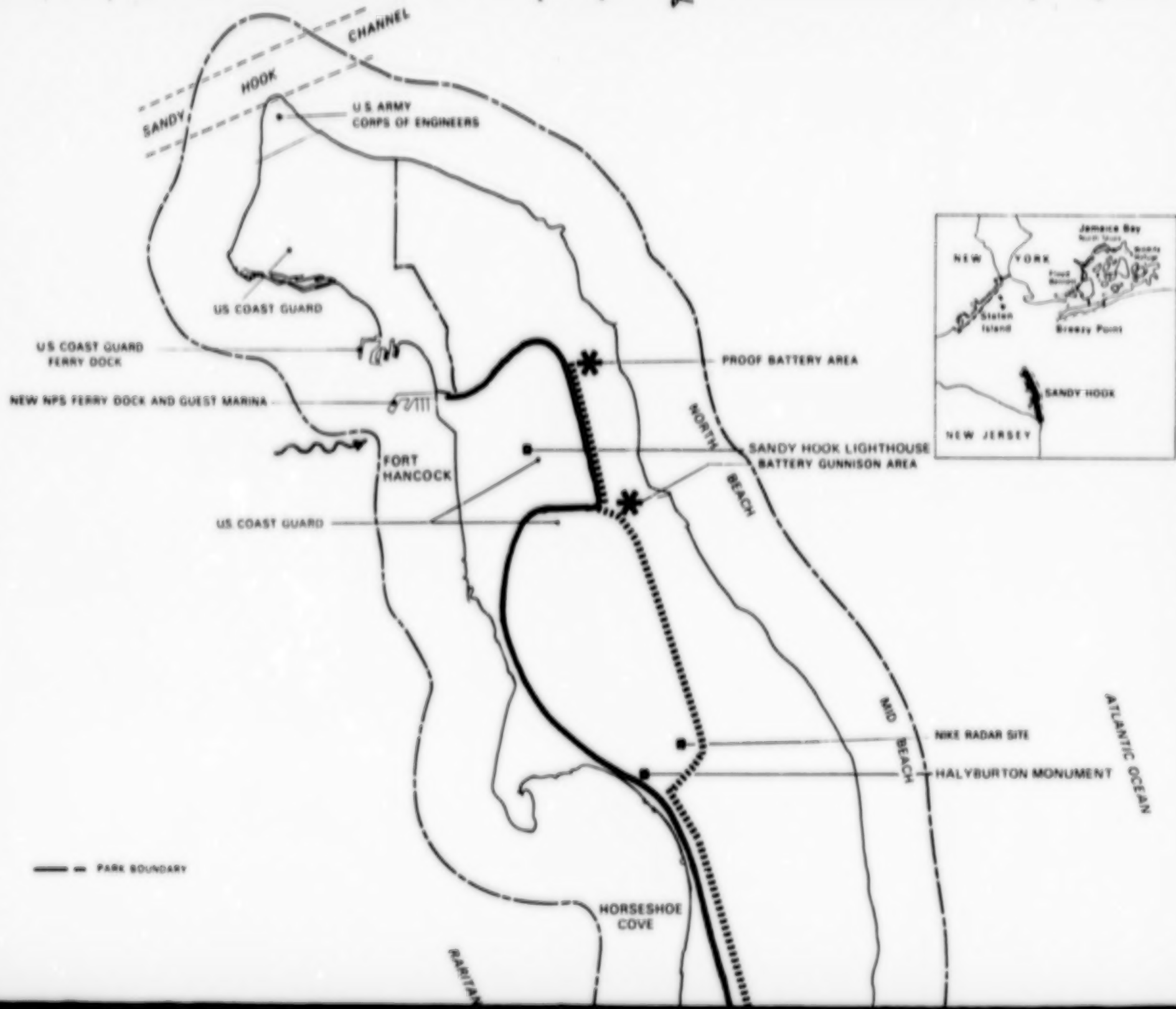
INDICATIONS OF BIKEWAY NEEDS

NATIONAL PARK SERVICE POLICIES AND PLANS

Sandy Hook is one of four units of Gateway, the national recreation area created in 1972 to protect the outstanding natural and cultural resources surrounding New York Harbor and to promote their recreational use by the region's residents (85 Stat. 1308). The unit covers the entire Sandy Hook peninsula, a narrow finger of land off the far northeastern corner of the New Jersey shore. Its 7-1/2 miles of ocean beach and sheltered bayside coves are some of the very few areas open to the public in northern New Jersey. Swimming and surf fishing are the most popular activities. In addition, the National Park Service conducts a variety of tours and special events out of the Spinnaceti Cove visitor center.

The 1979 General Management Plan and Final Environmental Statement for Gateway National Recreation Area proposes bicycle paths for all the Gateway units, including Sandy Hook, and directs that most major areas of the park should be accessible by bicycle. The plan places additional emphasis on alternative means of access to Sandy Hook by stating that nothing may be proposed for that unit that would increase automobile use on summer weekends (when traffic is already heavily congested) and that no increase in the number of parking spaces over the existing 2,800 will be allowed. The intent of the plan is that automobile access will be heavily supplemented by mass transit (bus, rail, or boat) and other alternate forms of transportation (bicycling and walking). This proposal is consistent with the NPS policy stating that a variety of transportation modes will be used for park access and circulation, and that wherever reasonable, nonmotorized means of travel will be emphasized. Bicycles are recognized by the National Park Service as viable alternatives to the automobile that provide a healthy, enjoyable, and energy conserving way to travel in the parks.

The 1979 Gateway plan calls for expansion of visitor facilities on Sandy Hook to include up to five new beach centers with bathhouses, a system of trails and raised dune crossings, group campgrounds, and picnic areas. The implementation of these proposals is underway, and four beach centers are programmed for construction in 1988. The plan also calls for the renovation of historic Fort Hancock to support a mix of private and public uses. The plan predicts that once these facilities are in place and ferry service is implemented, Sandy Hook will attract 3.6 million visitors a year. This is almost twice as many people as visited in 1984, when there were 1.9 million visits. Based on Bureau of Outdoor Recreation standards the carrying capacity of the beach is 99,000 people at one time (BOR 1970). With an anticipated turnover rate of 1.5 the beach itself could accommodate 149,000 people per day. In contrast, the current capacity of parking is roughly 9,800 people at one time or 14,700 per day. Thus, the greatest limiting factor on potential use is access and the restriction on parking.



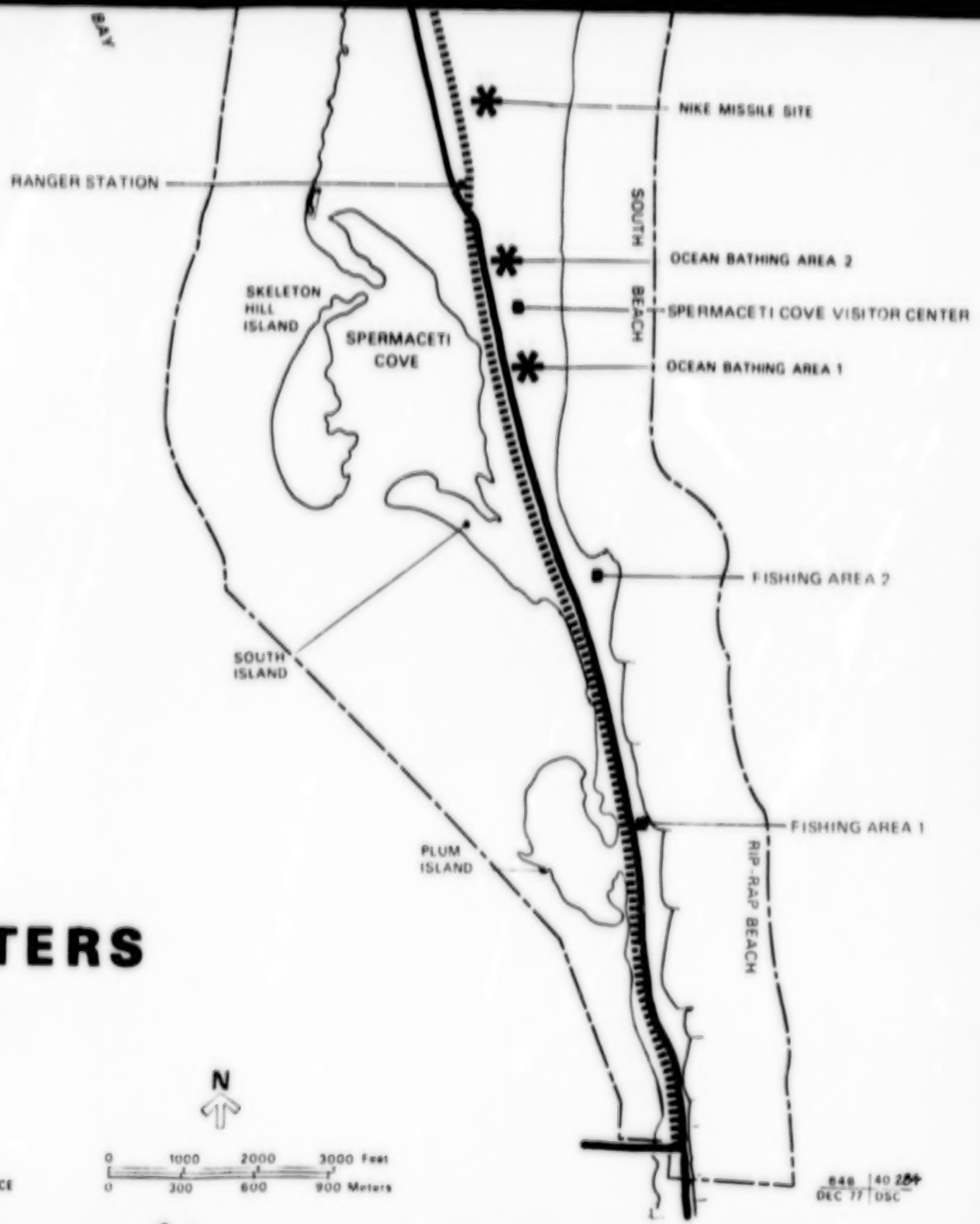
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ACTIVITY CENTERS CIRCULATION

SANDY HOOK
GATEWAY NATIONAL RECREATION AREA
NEW YORK / NEW JERSEY

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

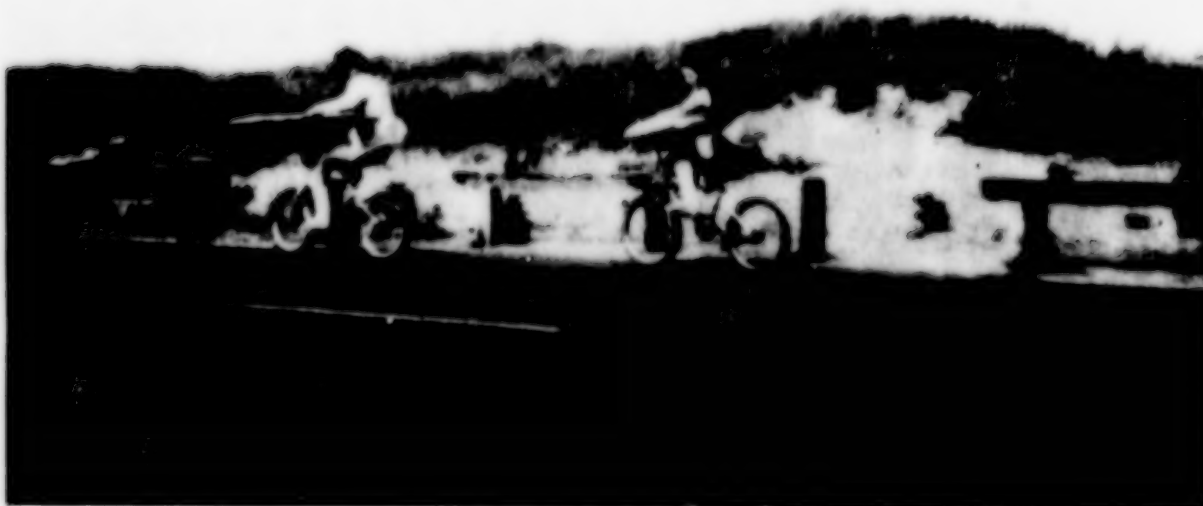
- POINTS OF INTEREST
- BEACH CENTERS
- AUTO
- BIKE
- POTENTIAL FERRY ROUTE



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DEC 77 USC

Although the Gateway plan and a special transportation study conducted by the National Park Service, New York City Planning Department, and New York Department of Transportation both call for the extension of local bus lines to Sandy Hook and implementation of ferry service, neither mode of public transit is scheduled for implementation in the immediate future. NPS bus service operated over a two-year trial period did not attract enough riders to justify its continuation. One problem with mass transit is that it is more expensive than driving for most visitors, especially when they come in groups. The recently instituted \$2.00 per car entrance fee will somewhat decrease the economic advantage of driving, but not significantly for most visitors. The National Park Service will continue to work with the appropriate transportation agencies to plan for improved public transit to Sandy Hook, but meanwhile, nearly all visitors will continue to arrive by private automobile. The only transit currently available is bus service that stops near the park entrance, allowing walk-in access to the southernmost areas of the peninsula.

On days when more cars want to enter the park than can be accommodated by the 2,800 available parking spaces, the park entrance must be closed for a couple of hours to allow for turnover of visitors. This already occurs on several days each year. Incoming traffic had to be temporarily restricted on five days in 1984 (that year the peak-day traffic totaled 4,630 cars). With expanded facilities and increasing demand this situation will occur more and more frequently.



Especially because of this situation, bicycle access will become an increasingly attractive alternative means of access for some visitors. Complete statistics on bicycle access have not been maintained because visitors entering by bicycle do not pay entrance or parking fees. However, recent counts and observations indicate that approximately 12,000 visitors arrived by bicycle last year. Visitors who use bicycles for transportation appear to be predominantly teenagers or senior citizens for whom time is not a limiting factor or for whom other means of transportation are not

available. Including visitors who bring bicycles to the park by automobile and people who are participating in or preparing for sporting events such as the triathlon, the estimate is as high as 40,000 biking visits per year.

MONMOUTH COUNTY POLICIES AND PLANS

The Monmouth County Environmental Council's comments on the 1979 Gateway plan strongly supported the policy to limit the number of cars and parking spaces within Sandy Hook, stating:

Such a curtailment would be necessary because, (a) the roads were not constructed for high volume automobile traffic, (b) valuable open space would not be lost to parking lots or fields and (c) there is not adequate park staff to police large numbers of cars within the Sandy Hook segment (reprinted in appendix A).

Monmouth County actively supports the use of bicycles as an alternate transportation mode and the development of bikeways to accommodate this use. The "Monmouth County Transportation Development Plan" (funded in part by the U.S. Department of Transportation, Federal Highway Administration) recognizes bicycling, particularly in resort areas, as an "increasingly important . . . transportation mode, not just a recreational activity." The plan also addresses the importance of bikeways:

It is important that conflicting uses between various modes of transportation be minimized. Bicycling in Monmouth County has become a mode of transportation to be recognized and planned for in concert with the movement of motorized vehicles on our highways and in our parks system. To this end, bicycle paths placed at strategic locations help eliminate or ease the confusion (and often dangerous situations) encountered by multi-modal uses.

The county's support for bicycle transportation is further demonstrated by its preparation of the Biking Guide. This guide, prepared in conjunction with MHA, the Monmouth County Citizens Advisory Committee on Bikeways, the Atlantic Bicycle Club, and the County Park System, is designed to help bicyclists choose safe and enjoyable routes to their destinations.

In addition the county, encouraged by New Jersey Assemblyman William E. Flynn, is actively seeking to develop a bikeway along an abandoned railroad line paralleling the north shore. This route would greatly enhance bicycle access to the recreation area from the north shore communities of North Beach, Keansburg, Port Monmouth, Belford, Leonardo, and Atlantic Highlands.

USER POPULATION GROWTH

The Monmouth County Growth Management Guide (Monmouth County Planning Board 1982) identifies five urban growth centers where high-density residential development is occurring. Two of these growth centers are within 10 miles of the entrance to Sandy Hook, making bicycling to NPS recreational facilities a reasonable transportation alternative. County planners predict that the population of the area within a 10-mile radius of Sandy Hook will grow to 153,600 by the year 2000, a 9.7 percent increase over the present population. The population growth in this portion of Monmouth County will increase the demand for recreational facilities on Sandy Hook by the population that would most benefit from bikeway access.

The number of people using bicycles for transportation and recreation is on the rise throughout the United States. The Bicycle Federation of America estimated that bicycle sales totaled 10.3 million and exceeded new car registrations in 1984.



ACCIDENT POTENTIAL

Currently bicyclists at Sandy Hook must share the narrow roadways with automobiles. Almost daily, cyclists report incidents of being forced off the road or otherwise having their safety threatened by automobiles. In the last four years only two accidents involving motorists and bicyclists resulted in the cyclist requiring medical treatment in a hospital (the only accidents for which records are kept). However, the potential for severe or fatal accidents is substantial, and it will increase as bicycle use increases. The National Safety Council has determined that the calculable costs of a death resulting from a motor vehicle accident in 1983 totaled \$210,000 (93 percent of the estimated total costs of the proposed bikeway). Having to share narrow roadways with heavy automobile traffic not only poses a threat to bicyclists' life and health, it also greatly diminishes the quality of what should be a relaxing recreational park experience.

GROWTH MANAGEMENT GUIDE Monmouth County

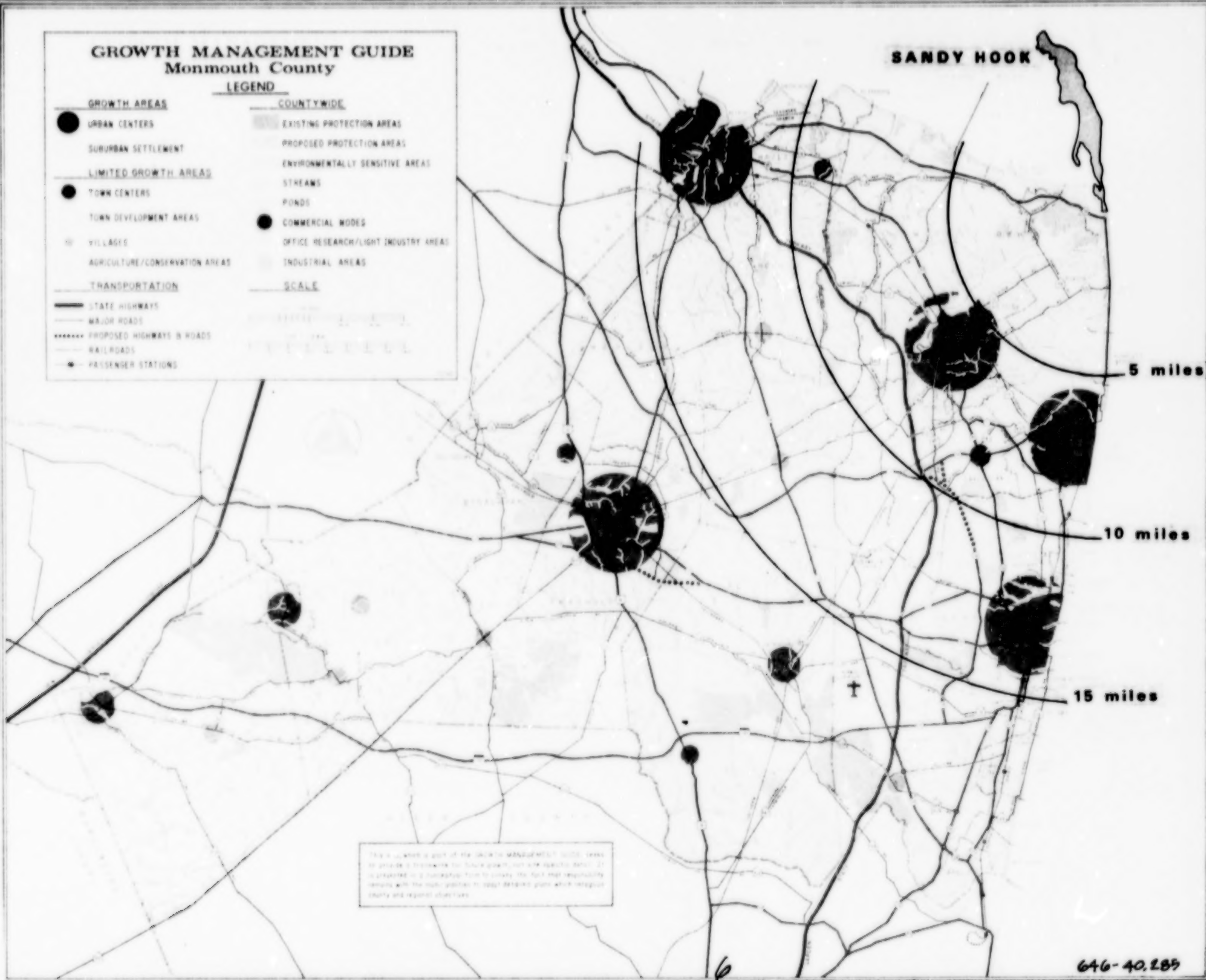
LEGEND

GROWTH AREAS

- URBAN CENTERS
- SUBURBAN SETTLEMENT
- LIMITED GROWTH AREAS
- TOWN CENTERS
- TOWN DEVELOPMENT AREAS
- VILLAGES
- AGRICULTURE/CONSERVATION AREAS
- TRANSPORTATION
- STATE HIGHWAYS
- MAJOR ROADS
- PROPOSED HIGHWAYS & ROADS
- RAILROADS
- PASSENGER STATIONS

COUNTYWIDE

- EXISTING PROTECTION AREAS
- PROPOSED PROTECTION AREAS
- ENVIRONMENTALLY SENSITIVE AREAS
- STREAMS
- PONDS
- COMMERCIAL NODES
- OFFICE RESEARCH/LIGHT INDUSTRY AREAS
- INDUSTRIAL AREAS
- SCALE



This is a portion of the Growth Management Guide, which is provided as a framework for future growth, not a specific plan. It is prepared in a preliminary form to convey the fact that responsibility remains with the public officials to adopt detailed plans which integrate county and regional objectives.

646-40,285

THE PROPOSED BIKEWAY

CONSTRUCTION

The bikeway will be constructed as an incidental part of the ongoing road rehabilitation work at Sandy Hook. The bikeway will be in part a bike lane and in part a separate bike path.

The first 5,500 feet of the bikeway will be constructed by adding 5 feet to the width of the main entrance road, and by narrowing the four existing 12-foot auto lanes to 11 feet each. This work will also correct existing drainage problems along the entrance road.

The second segment, approximately 12,500 feet, will be constructed as a physically separated bike path. The first 6,500 feet will parallel the bay side of Hartshorne Drive. At the park ranger station, the bike path will cross Hartshorne Drive and parallel it on the ocean side for approximately 6,000 feet, terminating at Atlantic Drive. From that point, bicycle access to Fort Hancock will be along Atlantic Drive. As part of the redevelopment of North Beach, Atlantic Drive will be closed to vehicular traffic.

The estimated construction cost of the proposed bikeway is \$227,000. This includes pavement, striping, signs, and bike racks. The design and construction of the bikeway will conform to the American Association of State Highway and Transportation Officials' standards, Guide for Development of New Bicycle Facilities, 1981.

Construction of the bikeway will comply with the National Environmental Policy Act, the National Historic Preservation Act, and other applicable legal requirements. When the alignment of the bikeway is established, the area will be checked for wetlands, floodplains, and endangered species as appropriate. An archeologist will evaluate the proposed alignment and an "Assessment of Effect on Cultural Resources" (XXX form) will be prepared.

NPS MANAGEMENT

The National Park Service has direct responsibility for maintenance and operation of all facilities at Sandy Hook. The 1985 maintenance budget for the unit was \$1,038,000, which covered all buildings, grounds, utilities, roads, and trails, and also maintenance management. Of that total \$134,000 was allocated for snow removal, sweeping, striping, and minor repair of the area's 33 miles of paved roadway. Because much of the proposed bikeway will be contiguous with the roadway, its routine maintenance can be considered incidental to that of the roadway. The recreation area staff has sufficient skills and equipment necessary to carry out all routine maintenance and minor repairs.

The proposed bikeway will be managed for the exclusive use of bicyclists. Regulations banning off-road vehicles and snowmobiles and prohibiting use of the bikeway either as a traffic lane or for parking will be enforced by park rangers. Only in the most adverse winter conditions of high water and drifting sand would the bikeway be used for emergency access.

APPENDIX A

Monmouth County Environmental Council

MONMOUTH COUNTY PLANNING BOARD

ONE LAFAYETTE PLACE

FREEHOLD, NEW JERSEY 07728



201-431-7460

June 6, 1978

Superintendent
Gateway National Recreation Area
Floyd Bennett Field
Brooklyn, New York 11234

RE: Draft Environmental Statement (April, 1978)

Dear Sir:

The Monmouth County Environmental Council has completed its review of the above report as well as the Decisions Paper. The Council commends the Park service for preparing an intelligent and comprehensive report and for your concern for development restraints in the Sandy Hook portion of Gateway. The Environmental Council does however, have some comments on the Draft EIS.

1. There is a tremendous need of an internal tram system to move visitor from one portion of the park to another. This type of system lessens the dependence on automobiles within the park and limits the access of visitors to portions of Sandy Hook which are more suitable for intensive use.
2. Along these lines the Environmental Council feels that if the National Park Service can not or will not institute a Tram System then they should sharply curtail the number of cars allowed into Sandy Hook. Such a curtailment would be necessary because, a) the roads were not constructed for high volume automobile traffic, b) valuable open space would be lost to parking lots or fields and c) there isn't adequate park staff to police large numbers of cars within the Sandy Hook segment.

3. The Environmental Council also stresses the need to have a bus shuttle to take park users to and from Gateway. Such a bus shuttle would further reduce the number of cars entering the Sandy Hook segment.
4. Finally, the Environmental Council still endorses recommendations made in its January 1977 statement on the Gateway Development plan.

In closing the Environmental Council commends you on progress to date, but cautions you that there is still much to do and that haphazard and unwise planning can ruin the invaluable natural resources present on Sandy Hook.

Very truly yours,

Robert W. Huguley
Principal Environmental Planner

RWH/jef



**National
Safety
Council**

Bulletin

Estimating the Cost of Accidents 1983

One of the most useful ways to measure the value of accident prevention work is through an estimate of accident costs. Without reference to costs, no accident prevention statement is complete. However, exact cost calculations from information now available are not possible. They only can be approximated. This bulletin shows how costs can be estimated for a community or state.

It is important to round an estimate, to show it is an approximation — not an exact figure. The recommended rule is: if the estimate is less than \$3,000,000, round to the nearest \$100,000; if \$3,000,000 to \$10,000,000 round to nearest \$500,000; if \$10,000,000 to \$30,000,000 round to nearest \$1,000,000; if more than \$30,000,000 round to nearest \$5,000,000.

NOTE: Cost estimates are not comparable from year to year. As additional or more precise data become available, they are used from that year forward. Previously estimated figures are not revised.

Cost of Motor-Vehicle Accidents

The calculable costs of motor-vehicle accidents are wage loss, medical expense, insurance administration cost and property damage. In 1983 the costs of all these items per case were:

Death	\$210,000
Nonfatal disabling injury	8,600
Property damage accident (including minor injuries)	1,150

Because of the different ratios of nonfatal injuries and property damage accidents per death, the cost *per death* for ALL accidents — fatal, nonfatal, and property damage — differs for urban and rural accidents, as shown here:

	All	Urban	Rural
Nonfatal injuries per death	36	58	23
Property damage accidents* per death	390	747	171
Cost, per death** (rounded)	\$970,000	\$1,500,000	\$640,000

* Excludes minor damage cases that may not be repaired — for example a hub cap smashed against a curb during parking.

** Includes cost items listed above for one death and the number of injury and property damage accidents indicated by the appropriate ratios.

These averages may be used to estimate the motor-vehicle accident cost in cities or states, but if a city is small they must be used with care. For example, if the year's death total is five, and four resulted from one accident, do not use the \$1,500,000 average per death. It includes the cost of 58 injuries and 747 property damage accidents. In such an unusual experience these ratios do not hold. Here it is more accurate to use the unit costs for deaths, injuries, and property damage accidents separately.

If a city had fewer than ten deaths during a year, it is more satisfactory to use the following unit costs for each death:

Age	Male	Female
Under 5	\$130,000	\$ 70,000
5-14 years	\$190,000	\$ 90,000
15-24 years	\$280,000	\$140,000
25-44 years	\$330,000	\$170,000
45-64 years	\$130,000	\$ 60,000
65 and over	\$ 20,000	\$ 19,000

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Chicago, Illinois 60611
312-527-4800

If a city has at least 10 deaths, using the all-ages \$210,000 average is usually satisfactory. Many cities and states do not keep complete injury and property damage accident records. If a city's records are believed incomplete, using the \$1,500,000 unit cost per death is more satisfactory. However, use this figure only if there were at least 10 deaths and only one or two occurred in each fatal accident. When fewer than 10 deaths, figure the deaths, injuries, and property damage cases separately, adding a reasonable amount to cover the estimated degree of incompleteness.

Cost of Motor-Vehicle Injuries by Severity

Estimates of the 1983 costs by severity of injuries, as used on the monthly state and city reports to the National Safety Council, have been prepared. These injury categories are defined in sections 2.3.3 through 2.3.5 of the Manual on Classification of Motor-Vehicle Traffic Accidents (Fourth Edition), ANSI Standard D16.1-1983. NSC estimates of the 1983 cost per injury for these categories are:

"Incapacitating" injury	\$18,200
"Nonincapacitating evident" injury	\$ 5,500
"Possible" injury	\$ 1,300

These estimates may be helpful for cities and states that have difficulty applying "disabling" injury cost to the totals that are available in their jurisdiction.

Estimates used for deaths or property damage accidents are not changed by using these estimates.

Cost of Other Accidents

Because obtaining information on the number and seriousness of nonfatal injuries from home, public non-motor-vehicle, and work accidents is difficult, estimate total costs on the "per death" basis using these averages:

Home accidents, per death	\$500,000
Public nonmotor-vehicle accidents, per death	390,000
Work accidents, per death	1,600,000
(including indirect cost, per death) ...	3,000,000

Multiplying the number of deaths times these average costs gives an estimate of the economic loss due to both deaths and injuries in these categories.

The \$3,000,000 work accident figure with indirect costs includes the monetary value of time lost by workers who were directly or indirectly involved in accidents. Losses from fires are the only property damage costs included in the work, home and public figures. No satisfactory estimates of other property damage costs are available.

The reason for the low home accident cost figure is that almost half the deaths, and many of the injuries, involve persons 65 years of age and older. Their wage

losses are relatively small. The high cost of work accidents is due to the large wage loss figure, and the administrative cost of compensation insurance which amounted to over \$570,000 per death (for both fatal and injury accidents) in 1983.

While multiple-fatality accidents such as those discussed for motor-vehicle accidents, probably are not found as frequently in the nonmotor-vehicle accident record, remember that one fire, explosion, or other disaster may account for most of a small community's annual fatality list. If this happens, estimate the costs by: (1) counting only one death for the disaster using the cost from the above figures; and (2) adding to this figure the cost for other disaster deaths using the age and sex table in the motor-vehicle section.

Even though a community generally will not be able to estimate the number of disabling injuries that occur in work, home, and public nonmotor-vehicle accidents, it may be useful to know the approximate economic loss per death and per disabling injury in these three classes of accidents. The table below shows the per case average cost of wage loss, medical expense, and insurance administration:

	Death	Disabling injury
Home accidents	\$100,000	\$ 1,400
Public nonmotor-vehicle accidents	130,000	1,500
Work accidents	205,000	6,000
including indirect cost)	410,000	12,000

These figures do not include any estimate of property damage or nondisabling injury costs and should *not* be used to estimate the total economic loss to a community from these kinds of accidents.

Definitions

Wage loss includes the loss of wages (or the value of service) due to temporary inability to work, lower wages when returned to work due to permanent partial disability, and the present value of anticipated future earnings for permanent total disability or death.

Medical expense includes doctors' and hospitals' fees and certain other costs.

Insurance administration costs includes all administrative, selling and claims settlement expenses for insurance companies and self-insurers, but excludes payments on claims. Claim payments are included in wage loss and medical expense.

Disabling injury is one which results in death, some degree of permanent impairment, or renders the injured person unable to effectively perform his regular duties for a full day beyond the day of the injury.

This bulletin was prepared by the National Safety Council's Statistics Department.

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As the nation's principal conservation agency, the Department of the Interior has basic responsibilities to protect and conserve our land and water, energy and minerals, fish and wildlife, parks and recreation areas, and to ensure the wise use of all these resources. The department also has major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

NPS D-71

END

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